PRE-APPEAL BRIEF REMARKS

The Examiner rejected claims 82-88, 91-102, and 125 under 35 U.S.C. §103(a) as being unpatentable over Gan *et al.*, U.S. 5,964,807 ("Gan") in view of Mechanic, U.S. 5,854,397 ("Mechanic") and as evidenced by Matsuzaki, *et al., Spine* 21(2):178-183 (1996) ("Matsuzaki"). Applicants respectfully traverse this rejection.

Claim 82 and all claims dependent thereon recite obtaining donor nucleus pulposus tissue comprising harvested extracellular matrix materials; and cross linking at least a portion of the nucleus pulposus tissue.

The Examiner alleges Mechanic teaches a process for cross linking proteinaceous material and Gan teaches a hybrid material comprising intervertebral disc cells and a biodegradable support substrate, wherein the intervertebral disc cells are nucleus pulposus cells that may be obtained from the patient or from donor tissue. The Examiner also points to Matsuzaki as teaching that intact nucleus pulposus cells actively synthesize collagen and proteoglycan. The Examiner further alleges the person of ordinary skill in the art would then find it obvious to use the hybrid material of Gan in the process of Mechanic, which would then allegedly produce the method recited by the present claims.

Mechanic fails generally to teach a method of manufacturing an intervertebral disc implant and specifically does not teach nucleus pulposus tissue. Gan teaches the use of donor nucleus pulposus ***cells*, but not tissue** comprising an extracellular matrix component harvested from the donor. Although Gan notes "tissue may be extracted from the nucleus pulposus of lumbar discs, sacral discs and cervical discs," that tissue, including extracellular matrix components thereof, subsequently is **discarded** to obtain isolated nucleus pulposus cells (col. 8, lines 50-61). These isolated cells are then combined with materials (i.e., polymer foams as noted by the Examiner) intended to substitute for the discarded nucleus pulposus tissue from which they were isolated and/or are cultured (*ibid.*). Thus, Gan teaches away from the use of "an extracellular matrix component harvested from the donor" because it discards that material.

Additionally, Gan teaches away from cross linking the nucleus pulposus tissue, given Gan's focus on nucleus pulposus cells. The Examiner has made no suggestion that Mechanic, as applied to Gan, would teach the cross linking of nucleus pulposus tissue which includes an extracellular matrix component. Finally, the Examiner asserts that Mechanic discloses cross linking of proteinaceaus materials; however, the polymer foams that the Examiner states are combined with the cells after any extracellular matrix is discarded are not proteinaceaus.

Matsuzaki does nothing to redirect the skilled artisan toward such a use, but simply confirms the prophetic disclosure of Gan regarding the ability of isolated nucleus pulposus cells to synthesize collagen (col. 11, lines 15-22). Moreover, any collagen synthesized by the isolated nucleus pulposus cells of Gan would *not* be an extracellular matrix component harvested from a donor, as is require by the claims.

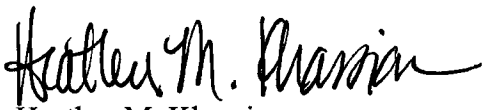
Therefore, Applicants submit claims 82-88, 91-102, and 125 are patentable over Gan in view of Mechanic as evidenced by Matsuzaki, and respectfully request this rejection be withdrawn and that the claims be allowed.

Second, the Examiner rejected claims 89-90 under 35 U.S.C. §103(a) as being unpatentable over Gan in view of Mechanic and further in view of Moore, *et al.*, U.S. 6,350,732 ("Moore"). The Examiner alleges Moore teaches a method for extracting lipids from a collagenous tissue sample. Applicants respectfully traverse this rejection.

Gan and Mechanic have been discussed above with respect to independent claim 82 and claims dependent thereon. As a threshold matter, claims 89-90, which depend on claim 82, are patentable for at least the reasons noted above. In addition, Moore, like Mechanic, fails to teach nucleus pulposus tissue comprising an extracellular matrix component harvested from the donor and does nothing to remedy the deficiencies of Gan in this regard. As such, the teachings of Moore combined with those of Gan and Mechanic would not lead the person of ordinary skill in the art to the presently claimed invention.

Therefore, Applicants submit claims 89-90 are patentable over Gan in view of Mechanic and Moore, and respectfully request that the claims be allowed.

Respectfully submitted,



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